Frankly Speaking

Common Sense!

AMERICA'S war-worker transport situation has its brighter aspects, but anyone who mentions that fact risks being called complacent. It seems important to evaluate our strength as well as weaknesses in order to use all our facilities most effectively.

Much attention has been directed, for example, toward transportation problems of defense plants built in thinly populated areas and now totally dependent on rubber-tired vehicles. We forget that such plants represent but a small portion of our total capacity for production. Meanwhile, pre-war plants in densely populated industrial cities are pounding out war materials which have already turned the tide of battle in every quarter of the globe. A great many of those plants are, or could be, essentially independent of rubber-borne personnel transportation.

There has been shallow thinking, also, in connection with employees' modes of transportation. We have slid gracefully, without justification, from the fact that a certain portion of war workers *use* private automobiles to the theory that the same group is *dependent* on individual transportation. Actual study shows that, in some cases as many as 70% of the employees using automobiles live within walking distance of their work, and the other 30% could be housed in existing homes near the plants, in the event of a rubber crisis. Other plants with comparable distribution of employees among the various modes of transportation would actually cease production if workers could not use their autos. We need more Transportation Generals and fewer transportation generalities.

We have heard it said that the transit systems of certain cities can carry no more passengers. Yet most of the factories in those cities operate at one-third to one-half of capacity during the night hours when street cars and buses are standing idle. Perhaps we have spent too much time changing working hours 15 minutes this way or that way to increase transit capacity 5 per cent. Working men and women seem to have more aversion to a 6:00 A.M. starting time than they have to a night shift by means of which transit capacity could be increased 100 per cent. Our war-time strength is greatly increased by these twin reservoirs of production capacity and transportation capacity.

Traffic engineers are masters of the techniques needed to secure and interpret the real facts about employee transportation, not as national averages, but by individual plants. With such information, the procurement divisions of the armed forces can plan future production on the basis of which plants can best meet the threatened shortage of war-worker transportation.

Jrm J McConochie

Member, Board of Direction.

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EMPLOYEE TRANSPORTATION OUTLOOK FOR 1943

by HON. JOSEPH B. EASTMAN

IN an all-out war there is little significance between civilian and military activities. Transportation is an essential part and an important thing transportation must do is to carry employees to work. It is one of our most important transportation problems.

For upwards of eight years public transportation had been facing a depressing demand and had been in the process of transferring from trolleys to buses. Building of new buses and trucks have been limited because of demand for materials used for armed services. New buses are being assigned where the need is greatest.

Buses and trolley cars are not the greatest factor in employee transportation. There are not many more than 150,000 buses in the U. S. and not as many as 45,000 in urban service. If we should lose a large part of our automobiles, public transportation couldn't carry the load. Mileage of passenger cars must be cut if we are to keep passenger cars in service. O.P.A., O.C.D., War Department and O.D.T. are active in the promotion of car-sharing of employee cars but have met with only partial success. No one is in a better position to improve car-sharing than those in charge of the plants. Tendency on the part of car owners is to believe that the most patriotic thing to do is to put up cars, but these cars should be continued in use for necessary driving.

Plants should do much to advise employees on car maintenance and the advance of liability insurance in relation to car-sharing.

There is no more effective way to increase the capacity of public transportation than by staggering of hours in plants. Some plants have arranged shifts all around the clock and peaks have been eliminated. O.D.T. has no power to change hours but can bring pressure to bear. Plants can work with local authorities in fitting hours into a community plan.

Next to group riding, Mr. Eastman puts Staggered Hours as most effective in solving the employee transportation problem. Employees must expect inconvenience of overloaded vehicles and must do more walking. Steadily the job is growing larger and the facilities growing less. There is no comfort in it for anyone. The most the public can expect is accommodation — not good accommodation.

Regional offices of Local Transportation Division of O.D.T. are established and are being expanded. O.D.T. is going to tie more closely to its office the State and local War Transportation Administrators appointed by the Governors and Mayors.

Digest of an address by Hon. Joseph B. Eastman before Wartime Conference on Employee Transportation at Hotel Pennsylvania, New York City, Thursday, February 25, 1943.

REGIONAL WARTIME CONFERENCE ON EMPLOYEE TRANSPORTATION

PANEL I. Keeping Cars Running

Dr. C. F. Phillips, Director, Automotive Supply Rationing Division, O. P. A.—The job of getting people to work is basically an industrial one. The Government can only assist and advise. A 50% reduction in car use will do the job in the West. In the East, a more than 50% reduction is necessary.

Mr. G. H. Scragg—White Motor Co., Cleveland, Ohio—We formed a good fellowship club in each plant and issued a basic questionnaire to all

employees asking: Mode of transportation; seating capacity of cars; location of employees' residences.

A map was divided into square mile zones. We used I. B. M. machines for sorting and grouping riders. Each worker went to the time-clock and found neighbors living in his home location. The driver was given a sticker with number of his home zone. Buttons and ten tokens were given to each driver so that he could ride with others when his car was out of commission. The driver collected tokens from his fellow workers, however, after men got together in clubs, tokens were not used. Token is a good way of getting men together.

A master index, according to map, with zones, names and number of persons in each zone is kept by the Personnel Manager and the Transportation Committee.

Mr. C. J. Crowley, Jr., Singer Mfg. Co.—We used a comprehensive questionnaire with much tire and gasoline information. O. P. A. cooperated and employees living within 3 miles of plant were not entitled to extra gas and tires for going to and from work. A cross-file checked whether employees had signed several other employees' forms. Colored pins were used showing number of riders—"Red", Driver only; "Yellow", Driver and 1 rider, etc. Another small pin was placed alongside to show the shift.

The map scale was 1,000 feet to the inch. We used a scaled rule with 30° additional factor for determining mileage and type of ration book required. Singer Company certified applications to local rationing boards. Parking lot surveys were made periodically to obtain load factors. Night shift workers were arranged so that a minimum number of employees would have to use cars. Success of ride-sharing plan depends upon amount of effort and expense the plant will put in and the cooperation between plant and O.P.A.

Mr. Carl Leland—The Aluminum Co., N. Y.—Our plant is located on St. Lawrence River, thus the area from which help is obtained is not a complete circle and population of area is especially sparse. There is very little bus service. Ride-sharing is essential. We carried out an extensive publicity campaign among employees. All ride-sharing was handled by Plant Transportation Committee. This Committee surveyed all employees with questionnaire, and residences were keyed by 2 mile square zones. Group riding is considered as a necessary supplement to use of bus service. Buses are kept operating at all times at capacity loads. Most inter-city buses reach capacity about 10 miles before reaching plant.

Dr. C. F. Phillips of O.P.A.—Local Rationing Boards operated well with only tires, but with gasoline rationing, difficulties arose. The *Plant Area Board* method is used in California for groups of plants. All people in plant go to nearest board. A panel of the Rationing Board is set up for a group of plants.

Mr. E. G. Cooper, Curtiss-Wright Corp., Buffalo, N. Y.—Cannot manufacture war products without transportation to plants. The Buffalo Rationing Board asked Curtiss-Wright to set up rationing board within the plant. All work is under the supervision of the Buffalo Rationing Board. This Board makes periodic checks of 50 applications to see how Plant Board is operating.

We have a map divided into zones, and zones are listed in a table according to mileage from plant and books issued on that basis. The plant can supervise rationing better than the local board because it has a closer knowledge of the workers' needs and can provide more riders. The plant method saves man-hours by issuing gasoline books. Some men had to take a day off to go to local board to get ration book. When the gasoline cou-

pon value was lowered, 8,000 of our employees had insufficient gas and plant took care of this quickly. This showed that plant had done a good job of car-sharing and rationing.

Ernest Lusby, Regional Mileage Rationing Representative, O.P.A.—Plant Area Boards are acceptable to O.P.A. These operate in conjunction with nearest Local Board. In Plant Area Board the transportation panel of a Local Board passes on the Plant Transportation Committee's work. The Director of the Transportation Committee must be a strong and capable person. He must have a record-keeping arrangement that does not permit employees to sign to ride with several other employees simultaneously. Washington O.P.A. has taken best points from a number of plans in operation, and plant can check its operations against the Washington check list. These lists can be obtained from District Offices.

Dr. C. F. Phillips, O.P.A.—The future may show that the physical problem of keeping cars on the road may overshadow the gas and rubber problems.

Earl J. Reeder, Chief Traffic Engineer, National Safety Council, Chicago, Ill.—Preventative car maintenance is an important factor today as applied to employee cars as well as to company-owned vehicles. Employers should advise employees on maintenance of their cars. The things which need to be given attention are: Tires; Brakes; Wheel Alignment; Lights; Lubrication at proper times; Tune-up and Operation of other parts of car; Accidents and Careful Driving.

Use the plant publication and other means of publicity to get information to employees in terms which they can understand. Some plants have provided tire inspection for employees' cars. Some do repairing for employees. As time goes on maintenance and repair will be given more widely as lack of repair facilities becomes more acute and as the threat of vehicles being taken off the road, becomes more real. Where states and cities have official inspection stations, these should gear themselves to give this service in a broader scope and advise employees on things needed to be done to keep cars on the road. The opportunity for substituting some other means of transportation for automobiles is not great, therefore, aggressive action for preserving employees' cars and keeping them on the road, must be taken.

Dr. C. F. Phillips, O.P.A.—Camelback had to be rationed because of hoarding, free use of autos and use of crude rubber in recapping. Today reclaimed rubber is used for camelback. Hoarding was cut down or wiped out by permitting recapping only for tires on the car and by turning in extra tires. Gasoline rationing on a national basis last Dec. (1942) has reduced high driving mileages. Rationing of gas, use of reclaimed rubber and wiping out of hoarding makes possible free camelback for passenger cars, but the rubber situation is still very serious.

PANEL II. Obtaining Facts

Chairman—HAROLD F. HAMMOND, *National Conservation Bureau*

Capt. C. E. Hall, Staff Officer, Hghway Div., Transportation Corps—Transportation Corps has studied 50 complete plant transportation operations and has prepared methods for a minimum of effort within plants. Employees today are over-questionnaired. Get today's facts and set tomorrow's procedures. Omit past history of operations. The *seating capacity* should determine the persons carried and efficiency of system. Firm must cooperate with established transportation systems in area and not try to set up an independent system for the plant. Manual decoding was used most by those present revealed by a show of hands.

Mr. W. R. McConochie, Traffic Engineer, Chicago Surface Lines—Checking the load factor is made at the lot when car enters and field form used shows male or female driver, seating capacity of car, etc. One man can take all information when cars enter parking lot. Computation is simple. Multiply the riders by number of cars. Divide total riders by total cars for average persons per car. Total seats and riders gives the efficiency of use of cars. The total men and women drivers is obtained from form and is important today.

Mr. John MacCrate, Jr., Sperry Gyroscope Co.—Today we can get essential parts but we don't know how long these will last. The used-car market will get worse. Public transportation systems have a large number of vehicles being laid up for need of parts. Few employees know much about the mechanical parts of the car. Cars are of little value after 70,000 to 75,000 miles. Some plants are interested in the purchase of newer used cars for employees. Routine inspections should be made every 4,000 to 5,000 miles. Plants should insist that cars getting supplemental rations be kept in good condition. Plant inspections should be more than visual. When employee asks for more gasoline, send him to plant mechanic to find out how to make his car more efficient. Plant could make arrangements with certain garages for fixing cars of employees. May have to set up a system of repair at plant because employee doesn't have time to go to garages. Some plants may have to do recapping for employees. Financing of car-sharing may be another factor for the plant to consider. The answers to these questions can only be determined by surveys and checks.

Mr. Robert A. Mitchell, Chief, Bureau of Traffic Engineering, Philadelphia, Pa.—Delays cause absenteeism and lateness. Types of delays are: Inefficient method of parking, illogical loading and unloading of public transportation vehicles, and traffic bottlenecks.

Only the first is in the province of the plant, but plant surveys will indicate the other delays and can influence changes. A ten per cent sample is sufficient to give causes of delays.

The data required is the time for workers to get to car and bus loading points and to get into vehicle. Checkers of the plant follow a few workers in and out of plant. The same checker can count the number of persons boarding vehicles and the time. Stop watches and forms must be supplied. Checkers can board the vehicle at the stop before the plant and count those on board and then get off first and check delays.

Poorly laid out parking lots and too few or badly laid out entrances and exits cause great delays. Delays on the street can be checked by floating with the traffic on employee routes leading to plant. These studies should be made with the advice of traffic men who have had experience in this work.

Mr. T. L. Blakeman, Planning Engineer, New Jersey War Transportation Committee—Every failure in private transportation results in a demand for public transportation. A *regional* approach is necessary to get the most efficient use of public transportation systems. It is important to know where the bus and trolley riders live and how they get to work. This information must be obtained by plants.

Mr. C. L. Dearing, Division of Review and Special Studies, O.D.T.—If the war runs into 1944, we might be faced with a great shift in auto transportation. In 1942 there was a rubber scarcity, in 1943 there is the fuel scarcity, increasing age of cars, and shift in ownership of cars.

The present arrangement in Washington for more gasoline for automobiles, is being considered in relation to fuel for heating and commercial ve-

hicles. Records should be maintained by each plant and each community to demonstrate the need for fuel for private transportation, otherwise it will not be released.

Today there are 5,500,000 to 6,000,000 cars in operation, over 7 years old, instead of 4,000,000 normally. It is increasingly difficult to get necessary parts and we must cooperate with others' needs for material. Records *must* be kept.

The poorer employees now working in plants have the oldest cars, travel the highest mileage and will need the most attention. Every effort should be given to keep cars in best condition and to keep records of needs.

PANEL III. Solving the Transportation Problem

Chairman H. S. Simpson, American Transit Association—Fifty per cent of Plant Transportation officers placed employee transportation as first or second in importance in a recent management poll.

Mr. P. N. Simmons, Regional Director of Local Transport, Eastern Division, O.D.T.—Every effort should be made to tie in problems in plants in outlying areas with existing transportation lines. O.D.T. policy is to refuse to extend lines beyond present facilities. If a survey is made to obtain an extension of service, it must be complete and must exhaust all alternative sources of service, especially share-ride. School buses may be used in some cases where the arrangements can be made with school authorities. The main thing to remember is that the minimum of service must be requested.

Mr. C. C. Wanamaker, Western Electric Instrument Corp.—The purpose of staggered hours is to reduce the A.M. and P.M. peaks. Staggered hours are needed *now* because of the increased riding being experienced. The adjustment of working hours should have as its objectives the spreading of hours as much as possible. Some plants must open earlier, others later. It is often necessary to institute intra-plant staggering but care must be made to see that changing the hours does not lower production. No plant should change hours without consulting the Local Transportation Administrator.

Western Electric Instrument Corp. now has 36 shifts. Staggered hours is a "must", otherwise drastic changes and devices will have to be made which will lead to tardiness and absenteeism affecting production adversely.

Mr. C. W. Sterling, Western Electric Co., Inc.—The hours in inter-plant staggering must be made so that the public transportation company can use their vehicles to make extra trips. Bus schedules, as well as hours must be adjusted and in the process some difficulties are at first encountered but these matters soon settle down.

Staggering of hours is necessary and due to nature of war emergency the problem of plants is to arrange workers to provide enough bus riders, in each shift, to make it reasonable to provide service. Consolidation of odd shifts and overtime also aids car-sharing. Mr. Sterling's plant has 12 main shifts but has around 60 shifts altogether.

Mr. R. C. Georger, Director, New York State Transportation Committee—Plant management must aid in improving traffic conditions on highways leading to war plants. The first thing is to select the routes which workers *should* use going to and from plants. The most direct route is not always the best route. The best route is the one which permits the easiest flow of traffic and conserves the tires, gas and vehicles of workers.

Plants can study routes by getting the distribution of workers and best routes to nearest main arteries. Having selected the arteries, the bottlenecks to movement must be checked and relief planned. Parking may have

to be eliminated on some routes. Signals may have to be removed or changed to flashers. Those signals which cannot be removed or placed on flashers can be retimed. Retiming should be frequent and arranged in accordance with the changing patterns.

Mr. H. S. Simpson, A.T.A.—Transportation is a plant responsibility and plants should urge local authorities to give more attention to needed changes for war production cannot continue without proper employee transportation.

Mr. E. A. Barton, Regional Transportation Officer, Third Civilian Defense Region, O.C.D.—Staggered hours played a vital and important part in the growth of the Glenn Martin plant at Baltimore. The efficient movement of vehicles when they reached plant area also played an important part.

The Company has 36 shifts coming in and 37 going out. Rotary traffic movement, decentralized parking, with lots located between points of origin and the plant were part of the plan. Readjustment of personnel so that employees did not have to cross each other's traffic lanes coming to and from plant was another main factor. If employees could not change residences, those coming from east and west were readjusted to lower the crossing movements. Illustrated instructions of directions were placed in employees' cars to advise them of best movements. Some road construction was necessary. Parking lots were paved to increase speed of movement. Plant guards were used as traffic police after proper training.

All of these factors have a great effect upon parking and relief of congestion and practically eliminated lateness and other items affecting production. Buses now carry 20,000 employees and places were provided for convenient loading with a minimum of walking and maximum of safety. The most important phases are: Staggered hours; rotary movement; paved parking lots; well-trained personnel.

DISCUSSION

70-80 per cent of persons in the Singer Company travel by auto with 3.85 passengers per car. This does not include drivers.

Mr. P. N. Simmons, O.D.T.—If a survey brings out the facts that new service is necessary and vehicles can be found, a certificate of war necessity will be granted by O.D.T. If everything has been done to use used equipment—school buses and staggered hours and group-riding is in effect, new equipment may be granted.

O.D.T. buses released for inter-city work can travel only 6,000 miles per month and for city work only 3,000 miles per month. This is because these buses may have to be used in other places in case of air-raid, disaster or other urgent need. O.D.T. would rather issue new equipment than raise the ceiling on mileage.

O.D.T. desires to leave any decision regarding interstate buses stopping to carry war workers on a route when travelling less than capacity to the proper local designated authority.

Capt. Hall, Transportation Corps—Seating capacity of auto, mode of transportation, and name and address is sufficient information for ride-sharing but rationing may show need for more employee information. Enlisted men are being trained in one case to interview civilian workers at a depot and information recorded on card. A gate check of who rides with whom is practically useless. It is all right to get the load factor.

Mr. R. E. Mitchell, Traffic Engineer, Philadelphia, Pa.—The same questionnaire is being used by all plants in the Philadelphia area, and the local administrator sorts and codes information for plants in area.

Mr. G. H. Scragg, White Motor Company—A Board was set up in

Cleveland where anyone could go in and register for rides or passengers.

In Broome County, N. Y., 35 companies use same cards and thus employees in different plants can be pooled. I.B.M. cards are used.

Mr. H. S. Simpson—On West Coast large aircraft companies with many small plants, arranged for workers with same skills to change residences to be near plant and not need transportation as much as formerly.

Mr. E. A. Barton—There has been some inter-plant exchange of employees in Baltimore area. Where employees are roomers, this problem is easier.

Mr. E. Lusby—Where there is not a *Plant Area Board* and where a group of plants operate through one board, the gas coupon books are sent to Plant Transportation officers from local boards for employees after certification in plant.

Mr. H. F. Hammond—Studies made at Curtiss-Wright showed that most women do not drive cars. In New York State only one woman out of every seven is a licensed driver. When 100 women replaced 100 men, 39 fewer cars came to the plant.

Mr. C. L. Dearing—Low income groups are in high mileage class, but low mileage cars are in the hands of high income groups. As the older cars go off the road and the low-income high-mileage workers need transportation, direct requisitioning is the most obvious answer; but great obstacles are involved. First we must find the low-mileage vehicles and then prove necessity of use by others. Continuation of the "A" book and confining it to non-pleasure driving would put many of these cars in the market for drivers of high mileage cars.

Liability Insurance—One company suggested that each member of pool contribute toward insurance. 30 per cent of private cars of U. S. carry liability insurance. Companies have reduced rates in some cases 40 per cent. A restricted form of policy may be issued and thus reduce factor of cost. This plan is before Washington officials. Industrialists may take this over and a deduction be made from payrolls.

A digest of the remarks at the Wartime Conference on Employee Transportation conducted under the auspices of the Office of Defense Transportation and co-sponsored by the National Association of Manufacturers and the National Conservation Bureau with the cooperation of I.T.E., N.S.C., A.S.F., A.T.A., and other agencies held in New York City, February, 1943, as prepared by the Editor, TRAFFIC ENGINEERING.

GREATER NEW YORK SAFETY CONVENTION

The 14th Annual Greater New York Safety Convention Traffic Session held at the Hotel Pennsylvania, New York City, March 23rd and 24th, highlighted its meeting dealing with *Getting War Workers to and from the Job* by placing before the participants of the panel a list of prepared questions ranging from programs in plants to meet employee transport problems to detailed procedures to meet specific aspects of parts of the problem.

I.T.E. members participating on the first panel were Harold F. Hammond, T. M. Matson, Major Fred C. Taylor and Leslie Williams.

The second panel dealt with the community's responsibility and part in matters of Staggered Hours, Share-the-Ride, Transit Company's Contribution and Wartime Traffic Control.

I.T.E. members participating were Robert A. Mitchell, Henry W. Osborne, and Hawley S. Simpson.

On Wednesday morning the motor vehicle itself and the State's responsibility in conserving motor vehicles were discussed by representatives of the N.H.T.A.C. to the War Department, and State Motor Vehicle and War Transportation Administrators.

THE ARMY EMPLOYEE TRANSPORTATION PROGRAM

by COL. FREDERICK C. HORNER

PRACTICALLY all of our crude rubber supply has been pinched off; the last passenger automobile came off the assembly line a year ago; drastic curtailment of bus and street car manufacture has taken place. However, we have been maintaining the movements of increasing numbers of persons with a decline in the number of vehicles available and in the condition of those units.

Disaster probably would have overtaken us months ago in local transportation but for slowing down of the rate at which we were using up our equipment. Some progress has been made in more intensive use of equipment such as group riding and staggering of hours.

In the next year of war we will experience an increased rate of decline in the amount of transport available. Transportation shortages will develop from these causes:—A growing shortage of motor fuel; Diminishing tire stocks; Diminishing rubber stocks; The increased age of vehicles; The difficulty in maintenance caused by shortages in parts, mechanics, repairmen and drivers; The increased cost of maintenance; An increased demand for transportation due to the stepped up tempo of war production and war activities; The drawing into industry of additional members of the family, particularly women, who must be supplied with transportation in addition to that furnished by the family car.

Experience and investigation demonstrate that the critical character of transportation is much emphasized when considering the war worker problem. This is due to the fact that the war workers are almost entirely transported by rubber-borne motor vehicles. The Public Roads Administration recently published a summary of war worker transportation at plants, which indicates that 86% of all war workers arrive at their jobs by private automobile and motor bus; the remainder depend on walking, street car, train or other means. The investigation showed that those dependent on motor vehicles were 73% dependent on the private motor car and 13% on the bus. In the newer war plants, located at some distance from the source of their labor supply, dependence on the motor vehicle approaches 100% in many cases. Moreover, for the successful operation of these plants the workers must continue to arrive by this means. Sufficient mass transportation equipment cannot be made available. Furthermore, the distribution of workers' residences is such as to increase the time of travel to an intolerable extent, thus precluding the possibility of the bus and the street car taking over the transportation job now performed by the private car.

Facts revealed by the Public Roads Administration indicate that 70% of the tires of workers' cars had less than 10,000 miles of use remaining. The survey also revealed that over 60% of the cars are 5 years old, or older. The age of cars in relation to the distance from home to work is believed to have a very important effect on labor turnover. A study conducted by the Highway Division of the Transportation Corps, at plants located at varying distances from the labor supply, showed that the further the plant from the sources of labor, the higher the percentage of late model or newer cars of the workers. The closer the plant to its labor supply the higher the percentage of older cars. It might be concluded from this data that the worker is guided somewhat in his selection of his job by the condition of his au-

tomobile. Unquestionably this has an important bearing on rate of turnover and absenteeism.

With less transportation units available, greater must be the occupancy per car to do the job. It is absolutely essential, therefore, that group riding actually be accomplished.

Intensifying the program of staggering work hours to permit more workers to use the mass transportation facilities is a *must* job in providing worker transportation. Speeding the movement of workers to the work bench from the home by cutting down loading, parking lot and factory and street traffic jams must be accomplished. Equipment must be conserved by providing necessary maintenance and intensifying preventative maintenance programs.

With almost certain prospects of reductions in the numbers of both workers and mass transportation units in service, it might be wise to consider the introduction of improvised vehicles into war worker transportation.

A number of war material manufacturers have recognized their responsibilities in relation to the transportation of their workers to the job. These manufacturers have justified the maintenance of Transportation departments on the basis of man hours of work saved alone.

The Services of Supply and the Army Air Forces are urging that manufacturers set up full-time Worker Transportation Departments within the plants to deal with these problems. This program provides for reimbursement for out of pocket costs for the administration of such departments, by separate Transportation Contracts or by allowing such costs as overhead in the case of cost-plus-fixed-fee plants.

Investigate completely the conditions of worker transportation, including such items as the distribution of the residence of the labor employed, sex and race classifications, means of transportation, distance and time required for transportation, condition of tires and vehicles, seating capacity and other information essential to the understanding of transportation, manpower turnover and related problems.

Establish a plan of operations to include increased use of car capacity, assistance in gasoline and tire rationing, assistance in preventative maintenance of cars, inauguration of a staggering, or spreading of hours program consistent with the production programs, in order to make maximum use of buses and street car systems, and to carry on educational programs to acquaint employees with the necessities and objectives of the transportation plan.

While the present program of the Army does not include actual transportation operations or costs of such, it is recommended that the organization of employee transportation departments be set up as if actual operations were contemplated. If situations develop so as to require actual transportation of persons with buses, fleets of converted passenger cars or any other transportation devices or arrangements, a competent organization would be available.

Manufacturers are submitting proposals in increasing numbers. A typical organization consists of a Transportation Manager and an Assistant, if the plant size warrants, and one person of subordinate grade for each 1,000 persons employed in the plant. The average cost runs around $3.00 per employee, although the Army does not regard this as a rigid limit.

A few illustrations of the operations of some contractors may be of interest:

A transportation department conducted time studies to determine how long it took for a man to drop his tools and get away from the plant. The time ranged as high as 48 minutes. A traffic engineer was added to

the department's staff to correct the situation.

Another department has distributed several thousands of bicycles to its employees at cost. This same department operates a bus line from a railhead to the plant.

Several plants have inaugurated a complete tire inspection service as a part of a preventative maintenance program. Others have extended this service to include the mechanical condition of the vehicle.

An Army installation experienced transportation difficulties for about 4,000 employees. Starting time was 8:45 A.M. All available buses were used, and as a result of crowding, several employees were injured requiring hospitalization. Hours were staggered on three equal shifts ten minutes apart. It was just like waving a wand. Buses were able to make additional trips from transfer points, resulting in increased capacity and more comfortable rides.

It is a matter of observation insofar as the Army experience is concerned that the least danger of a collapse of employee transportation is found in plants and installations having an intelligently administered transportation department. Success in this vitally important field by the manufacturer certainly might merit the Army "E" award as an outstanding production accomplishment.

Digest of an address by Colonel Frederick C. Horner, Chief, Highway Division, Transportation Corps, War Department, before the Wartime Conference on Employee Transportation, National Association of Manufacturers and National Conservation Bureau, New York, N. Y., February 25, 1943.

INVENTORY OF MAN POWER IN INDUSTRY

by ROBERT A. MITCHELL

THE Philadelphia-Metropolitan War Transportation Committee has prepared in pamphlet form a *Plan for Inventory of Man Power in Industry to Conserve Transportation.*

Plan: The plan, as summarized here, proposes a Transportation Committee in each plant or establishment employing one hundred or more workers, with a paid, full-time staff to:

1. Prepare, file, analyze and maintain for each employee, records pertinent to the employee's ability to reach the plant.

2. Cooperate with the Philadelphia-Metropolitan War Transportation Committee in plans for providing adequate mass transportation facilities.

3. Organize and maintain "group riding" among employees dependent upon private motor vehicles.

4. Certify to the need of employee's using private motor vehicles for supplemental gasoline and new tires.

5. Establish (where possible) safe and convenient loading and unloading stands for transit riders—convenient and safe parking facilities for auto riders.

Organization: In plants employing from 100 to 500 workers, one person, preferably the personnel executive can adequately handle the work with the help of a stenographer or clerk. In larger plants the Committee should consist of the plant manager as chairman with the personnel director and an employee representative assisted by full-time office help, the number depending upon the amount of work.

Where there are a number of plants in the same area, a Co-ordinating Transportation Committee composed of one representative from each Plant Transportation Committee should be organized. It will probably become necessary as the war progresses to develop plans for providing transporta-

tion for workers to a given *area* rather than a given plant.

Operation: The first step is to obtain accurate information from each employee in the plant on: Name; Home address; Time of work; How usually get to work; If he uses automobile, does he share his car with others; and length of time to get to work.

Standard forms have been prepared by the Philadelphia-Metropolitan War Transportation Committee and the local office of the War Production Board for this purpose.

The second step is the decoding and tabulating of the forms received from the employees by the Philadelphia-Metropolitan War Transportation Committee. The forms and summary sheets are returned to each plant in care of its Transportation Committee for their use in administering the Man Power Inventory.

The next step is to get a visual picture of the home distribution of manpower both for individual plants and for plants in the same area. Maps of the Philadelphia-Metropolitan area are divided into small sections and numbered, according to a pre-arranged code. The number of employees living in each one of these sections is noted on the map. Having established on the map the residences of the employees in each section of the area, their hours and means of transportation can be obtained from the original questionnaires and this information also placed on the map.

The Transportation Committee of each plant prepares and maintains a suitable record of each employee on a card filed by zones corresponding with those on the maps using different colored cards for each type of transportation medium, such as:—White for "other than automobile," Yellow for "private automobile as owner," Salmon for "private automobile as passenger but not owner of vehicle." These are similar to the forms used by Charles M. Upham, Jr. (Jun. I.T.E.), Traffic Engineer of the Conservation Bureau of the Hartford Chamber of Commerce.

The principle aim of the Transportation Conservation Program is to see if it is not possible for workers to use mass transportation facilities without interfering with his or her efficiency. This is accomplished by placing the "overlay" map on which is placed the data regarding the residence of each worker over a map showing the mass transportation facilities of the area, then taking each form individually and ascertaining whether or not that employee's residence is near enough for the employee to use mass transportation facilities. If mass transportation is available, the approximate time required for the employee to get to work is checked, keeping in mind the number of transfers required, the frequency of schedules and allowing an average speed of 12 MPH for street cars, 15 MPH for buses, 20 MPH for high speed lines and 4 MPH for walking.

If the combined time for traveling to work is one hour or less, the employee in most cases should be expected to use mass transportation, if that transportation is not already overtaxed. If the employee lives not more than two miles from his place of employment he is expected to walk instead of using a private automobile.

In the case of women employees who might be required to wait at some sparsely inhabited spot, or walk any great distance during the late hours of night or early hours of morning, the use of private automobile transportation should be approved.

Ration Boards will not issue approvals for supplemental gasoline or tires until proof of such needs is certified by the Plant Transportation Committee, and whether or not the motor vehicle is being used to its fullest capa-

city possible in carrying other workers.

The procedure suggested is to:

1. Remove the cards of automobile owners and riders from each zone at one time.

2. Set aside automobile owner cards which show a full load is being carried, then verify and if correct return to file.

3. Set aside the cards of those automobile owners who are not listed as sharing their car with at least three other persons (except owners of coupes).

4. Then ascertain if there are not some owners in group (3) who could team-up with these by alternating their cars in carrying a full load every day.

5. Where different working hours will prevent this teaming-up, consideration should be given to changing the working hours with employees using mass transportation so as to effect a more efficient use of automobiles, not, however, if it would interfere with maximum production.

6. This procedure should be followed for each zone.

7. In the rear of the file for each zone should be placed all cards which have not been placed into satisfactory car sharing groups.

8. The cards noted in (7) should be withdrawn from combinations of zones contingent with one another and an attempt made to develop group riding combinations.

9. The cards that remain after procedure (8) is completed should either be (a) marked in some way to indicate that no further group riding is possible where the plant is isolated by itself or (b) sent to the headquarters of the Co-ordinating Plant Transportation Committee for plants in the same area where group riding plans might be worked out among employees of the various plants.

10. If there are any cards left after procedure (9) is completed they should be marked as noted in (9a) and returned to the worker's plant for filing. Where car sharing pools have been arranged, the original card of the automobile owner should be returned properly filled out and sent to his Plant Transportation Committee and copies sent to the plants of the other workers in the group.

The storage of workers' automobiles near the plant is handled by the Committee. In a number of cases plant management is leasing or purchasing vacant property near the buildings and establishing a free parking area for employees' cars, in other cases is making contacts with private property owners to furnish parking space at a very small fee. Where such parking facilities are provided the Committee should see that the lot is marked into individual numbered stalls with white paint. Each car is then given a number and assigned to a stall. In this way there will be a little confusion because driver and passengers will have no difficulty in obtaining a parking space nor in finding the vehicle at quitting time. This also provides the Committee with a means of conveniently checking compliance with the plan.

A digest of a pamphlet entitled *Inventory of Man Power in Industry* published by the Philadelphia-Metropolitan War Transportation Committee, January, 1943. Robert A. Mitchell (Mem. I.T.E.), Transportation Director.

RENT OR BUY

It has been said before and is being advanced again that automobile manufacturers may rent rather than sell automobiles in the post-war era to encourage prospective users who would hesitate to purchase owing to high taxes imposed on automobiles.

ASPIRIN FOR SIGNING AND SIGNALLING HEADACHES

by H. E. HILTS

THE two topics announced for this discussion, "Substitutes and Priorities" and "Blackout Practices," are without doubt the cause of two of the heaviest headaches traffic engineers have today. Aspirin, the suggested and conventional remedy for headaches, may be what we need, but I'm inclined to favor the use of castor oil. Of course there is only a short time allotted to this discussion, but perhaps we can swallow a teaspoonful or so, and after all, a little castor oil goes a long way toward getting some action.

One dose that has already been administered is the joint effort of your organization, the American Association of State Highway Officials, the National Conference on Street and Highway Safety, the Office of Civilian Defense and the War Department to prepare a War Emergency Manual on Uniform Traffic Control Devices to better meet the conditions superimposed by the war. I am glad to report that this effort has had enthusiastic support and a War Emergency Edition of the Manual will shortly be available for distribution. The new War Emergency Edition has two divisions. Division I is the result of streamlining the old Manual and the deletion of reference to traffic control devices not considered important or vital during the war emergency period, such as signs marking points of historic interest. In Division II, traffic control devices that are effective under blackout conditions are discussed. Later on, a Division III will be prepared to cover the dimout condition, which as yet has not been thoroughly explored by the Army engineers.

The problem of discovering and developing the adequate substitute materials for those that have become scarce because of the war is not a simple one. Substitutes often become critical themselves, perhaps eventually more so than the original material. We tend to think of substitution in terms of one material for another in the same device. We must also learn to think of substitution of one device for another, such as a sign for a signal, or perhaps a marking for a sign. The impact of tire and gasoline shortages on traffic volume and speed, and hence on the need for traffic control devices is a factor that cannot be overlooked. A revaluation of existing installations in the light of changing traffic conditions will often provide equipment for a new and more urgent need. For example, with the current 35 miles per hour limit set by the Office of Defense Transportation, many of the signs indicating higher speeds are being removed and will be useful for other purposes.

And this brings me to an important point regarding priorities. The War Production Board, in considering an application for a preference rating on the purchase of traffic control equipment, requires that the need for the new equipment be clearly established as urgent, and a showing must be made that no adequate equipment is at hand or available from any source. We have worked closely with representatives of the War Production Board in Washington in developing a general outline of pertinent information to accompany applications for traffic signal equipment preference ratings. This will appear in the War Emergency Edition of the Manual and may be used as a guide for any traffic control device application. Some of you may wonder why an allotment of certain materials cannot be made for use in traffic signals and signs. Perhaps you will understand when I say that it has taken

months to develop an allocation plan with the War Production Board so that steel plate and structural shapes would be available, even in moderate quantities, for vitally necessary highway bridges and other street and highway structures. By comparison, the amount of critical material required for signs and signals is extremely small and, for this reason, would seem to have far less chance of recognition in an allotment program. In other words, requests for priority ratings on purchases of new materials for traffic control devices have to be given individual consideration on the basis of their individual merit and each man will have to take what he can show he is entitled to, or, more bluntly, what he can get. This may sound a bit gloomy, but war is not pleasant and this matter of getting adequate traffic control devices will take every bit of ingenuity and cooperative effort that the traffic engineer, the equipment manufacturer and others can give.

We have all heard a great deal about blackout traffic and how it can best be handled. Many authorities are well advanced in their plans for controlling traffic in blackout and some have erected devices for the purpose. When such installations are being planned, it is highly important to estimate as well as possible the amount and type of traffic to be served. For example. if only a few emergency vehicles are to be permitted to operate and will not be required to obey signal or sign indications, the installation of special equipment for their control is largely a waste of material and energy which could well be devoted elsewhere. The War Department has issued specifications entitled "Blackout Requirements for Highway Movement" and "Traffic Control During Blackouts," both of which appear in the new Manual, and these prescribe in some detail the use and treatment of traffic control devices during blackouts. Details are not yet available from the War Department on the proper treatment of signs and signals during dimouts. Since the dimout will permit a higher level of illumination than exists during blackouts, and since more vehicles will be moving, sign and signal requirements are bound to differ. It should be hoped that equipment and critical materials will not be squandered on special traffic control installations where there is no traffic to control.

The lighting equipment approved for use on passenger vehicles during blackouts consists of one headlamp, two clearance lamps and a combination stop and tail lamp. The one headlamp is mounted as far forward on the car as possible, preferably at a height of 42 inches and 11 inches left of the center of the vehicle. This position brings the light source close to the driver's normal line of vision which is highly desirable when viewing reflectorized surfaces on signs and markings. The headlamp is aimed downward so that the top of the beam drops 2 to 3 inches in 10 feet. The road surface is uniformly illuminated for the distance between 20 and 100 feet in front of the vehicle. The top of the beam is sharply cut off and gives no illumination beyond a point 200 feet in front of the vehicle.

Using these approved lights, studies were made by the Ohio Department of Highways and the Public Roads Administration to determine the effectiveness of various types and locations of traffic control devices under blackout conditions. These tests showed that standard signs in standard locations are of practically no use. To be of advantage signs must be reflectorized and placed practically on the ground. The top of the sign legend can not be more than 24 inches above the road level and still be effective. Pavement markings have increasing importance under blackout conditions and should be used liberally. Interior-

illuminated signs of special design have some use where it is not possible to place a reflectorized sign in the range of the blackout headlamp beam. Fixtures for providing exterior illumination of signs have also been devised and can be used where it is desired to illuminate a standard sign in its normal location.

Driving in a blackout at the recommended speed of 15 miles per hour comes close to being an adventure. Even at this slow speed, objects loom up with startling suddenness and approaching vehicles, with only two faint marker lights visible, slither by like ghosts in a fog. There is no single aid more valuable in such a situation than a reflectorized centerline. Without it, it is almost as much the rule as it is the exception to get into the "rough," and of course it may not always be on the soft side of the road. I'm hoping that few of our rationed miles will be driven under conditions such as these.

I am in agreement with one of the observers on the Ohio project, who happened to be a live newspaper reporter. His conclusion was "Yes I am a blackout driver but my experience has shown me that my blackout driving will be done with my car in the garage."

A paper presented by H. E. Hilts, Chief, Division of Highway Transport, Public Roads Administration, at the 13th Annual Meeting of the Institute of Traffic Engineers, Chicago, Illinois, October, 1942.

ON THE SHELF

From Plan to Reality III, published by Regional Plan Association, 400 Madison Avenue, New York, N. Y. Price $1.50. This publication is the third in a series of *Plan to Reality* reports dealing with planning improvements in New York and its environs. Series III outlines planning for the Post-War City. It aims at the rebuilding of the central cities in the New York region into communities suitable for well-rounded family life at all ranges of income. Its treatment of general traffic highways offers an interesting study of traffic planners.

Annual Report of the Traffic Engineering Bureau, City of Detroit, July, 1941-June, 1942—This report contains 47 pages of information ranging from office and shop facilities to traffic programming for the future.

Accident Facts, National Safety Council, Inc., 1942—A compilation of authentic data on accidents of all types. Of special interest to traffic engineers is the Motor Vehicle Section.

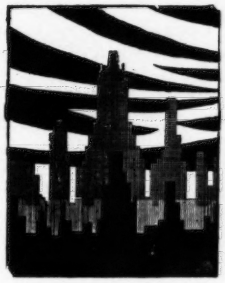
The Crisis in Worker Transportation: a 12-page reprint from Factory management and Maintenance, Sept. 1942: 330 West 42nd Street, New York, N. Y. 4c each. Ideal for distribution to plant transportation committees.

A Master Plan for Detroit, Detroit City Plan Commission, Detroit, June 1941—A comprehensive outline for the future physical development of the City of Detroit.

Traffic and Employment Study, K. T. Healy and T. M. Matson, New Haven, Conn., June 1942—An analysis of the relationship of load to employment and capacity.

Progress Report, Hartford Conservation Program, National Conservation Bureau, June 15, 1942 — An analysis of the war transportation problem in Hartford and a proposed program for transportation and vehicle conservation.

"Keep 'Em Rolling": a booklet showing the importance of rubber in the war effort published by the B. F. Goodrich Co., Akron, Ohio.



Stop, Look and Listen

PERSONALS

Word has been received of the recent promotion of Major George W. Barton (Mem.), and Major Franklin M. Kreml (Affil.), who entered the U. S. Army Transportation Service as captains last summer. Both are serving in the African theatre of operations. They report that they have heard from Captain Harry H. Harrison (Mem.), who is stationed in the same part of Africa but not in the same sector. Major Light B. Yost (Affil.), and Captain Carl E. Fritts (Mem.), are also in the same general area.

Lt. Joseph J. Feuchter (Mem) has had his World War I commission reinstated after having completed most of the basic training of a selectee at Camp Adair, Oregon. Lt. Feuchter has been transferred to Fort Custer, Michigan, where he will be in the Transportation Service.

TRAFFIC SPEEDS IN WISCONSIN AFTER GASOLINE RATIONING JANUARY, 1943

The average speed of traffic on rural Wisconsin highways was about 31:5 m.p.h. by the middle of January as compared with pre-war average speeds of about 52.5 m.p.h. This represents a reduction of about 5.6 m.p.h. from the average speed of 37.1 m.p.h. recorded in November, 1942.

The above averages are based on observations of 3,219 cars at fifteen locations scattered throughout the State. All of the studies were made during daylight hours. In most instances the road was partly or wholly covered with ice or snow, and the weather was generally cold, several studies being made in sub-zero temperatures.

It is believed that there were four major factors causing the rather low observed speed:

1. Gasoline rationing under which anyone travelling at high speeds was likely to lose his gasoline ration card if arrested.
2. Desire to save tires and gasoline.
3. Ice and snow on the roadway.
4. Normal winter slowing down.

Probably the fear of losing one's gasoline ration was the most important of the above factors together with normal winter reduction in driving speeds. Roadway conditions apparently affected speeds only moderately as shown by the following:

Roadway Condition	*Av. Spd. m.p.h.*
25% or more of roadway covered with ice or snow	29.5
Pavement bare or having less than 25% ice or snow	32.1

Submitted by Wayne N. Volk

DO YOU KNOW

War Department plans to require its plant contractors to study working hours with a view to making adjustments?

P.R.A. studies showed December, 1942, rural traffic was about half the volume of December, 1941?

TIME ZONING

Highway administrators concerned with roadway control and improvement will be interested in the following excerpt from a recent enactment of the General Assembly of Virginia.

"Reasonable regulations may be adopted by Councils and other governing bodies of cities and towns of the Commonwealth for the gradual elimination of uses of land and buildings that do not conform to such (zoning regulations and restrictions).

The Ohio Court of Appeals recently sustained a provision in a Cleveland ordinance requiring the removal of unenclosed junk yards and auto dismantling yards from all land within a first or second industrial district within 18 months after the effective date of the ordinance (December 30, 1937).

A proposed zoning amendment now being considered by the Chicago City Council asks the removal of all billboards and non-conforming signs in family residence, duplex residence, apartment house and group house districts within one year after the effective date of the amendment.

BLACKOUT ADAPTER FOR TRAFFIC SIGNALS

An adapter reported to render traffic signals suitable for normal day or night or blackout operation has been adopted by the California Division of Highways.

The device consists of an 8 in. diameter cylindrical shape, 6 in. long which inserts into the end of 12 in. tunnel hoods which are extensively used in California (instead of standard type visors). Inside the cylinder are 3 vanes, one above the other and pitched downward to the front at 15° below horizontal (when installed). Transversely across the top surface of each vane are several fins designed to produce the desired screening effect. When viewed from directly in front, the vanes and fins obstruct 40% of the normal lens surface exposure. When viewed at close range the signal indication appears as 4 horizontal bands of light.

Observation from a Navy blimp revealed that, with the red light on, a dull red reflection on the pavement became visible at ½ mi. distance and 500 ft. altitude. With the amber light on, the pavement reflection became visible only after approaching to ¼ mi., at 300 ft. elevation. In no instance was direct light visible from the air. Standard 60 watt signal lamps burning at normal brilliancy were used in the tests.

(Based on articles appearing in CALIFORNIA HIGHWAYS AND PUBLIC WORKS, by A. E. Simmons, Assistant Highway Engineer, California; and ENGINEERING NEWS RECORD 11-5-42.)

BLACKOUT DRIVING

London (INS)—British motorists find eye strain is the first difficulty encountered in blackout driving and is only mastered by continued practice.

Bus drivers and motorists were especially bothered by pedestrians pointing flashlights at drivers. The use of flashlights had to be restricted.

On all thoroughfares there is a continuous white center line. At street corners curbs are painted black and white. Car bumpers are painted white. All obstructions such as sandbagging, building encumbrances, trees, and other obstacles are painted white. Pedestrians now wear white arm bands and white helmets.

At pedestrian crossings large sunken reflectors have been installed.

During blackout hours (comparable to our extreme dimout conditions) speed of all vehicles except fire, ambulance, police and other emergency vehicles is restricted to 20 miles per hour.

TRANSIT CRISIS DRAFTS WARTIME STREET PROJECT

MANY parts of municipal long-range planning programs have been forced into retirement for the duration, however, Detroit's Davison Avenue street improvement, in contrast, has been stepped up to meet an aggravated problem brought on by war industry.

This improvement, 7,000 feet in length, connects two highly industrial sections of Detroit and carries a large volume of truck traffic. It crosses seven heavily traveled streets. Traffic counts show that 95 per cent of the vehicles using this route are through-traffic Detroit cars.

This project, a normal peacetime development planned for the city by the Wayne County Road Commission, was completed because war activity increased the Davison Avenue traffic load to the saturation point, forcing residential side streets to carry an appreciable portion of the load.

Three 11-foot lanes of traffic were provided in each direction. These two 33-foot strips were separated by a 6-foot dividing strip planted with grass and low shrubbery. Traffic on these express areas is carried below the normal street elevation, with the traffic from the seven cross streets passing over them on rigid frame structures. Local service traffic is carried on streets constructed at the normal level at each side of the avenue. These service drives are each 22 feet in width and are flanked by sidewalks.

Widening for bus stops was accomplished at Woodward Avenue at the center of the project. Stairways were constructed at each corner of the Woodward bridge. Also in one section the service drives have been widened to permit parking for the shopping district.

The total width of the improvement is 205 feet measured from property line to property line, except at two locations where large buildings would have had to be wrecked to accomplish full widening. Here, retaining walls were substituted for the sodded slopes normally used.

In keeping with the times, all the work was designed with a minimum of steel, using pavement 10 inches thick of unreinforced concrete mixed approximately 1:2¼:3½. Traffic separations were designed to save an appreciable tonnage of steel.

Among the underground utility problems was that of storm sewers since the street was lowered to such an extent that the gravity system no longer would work. Four pumping plants were installed to take care of this water, delivering their flows to 10-inch mains.

The total cost of the project was $3,400,000 of which the construction, engineering, and administration counted for $2,000,000. Ten separate contracts were involved. An original priority of A-10 was later changed to A-4 as the need for this project grew more apparent.

Condensed from an article in *The American City*, December, 1942.

LOS ANGELES TRAFFIC BUREAU ACTIVITIES

While war problems arose for this department before this country was at war, December 7, 1941, saw the start of new war problems which concerned this department during the year 1942. First, it became necessary to provide for the blacking out of traffic devices during air raids. No time was available for experimentation. Therefore, the method of masking used in Lon-

don was utilized. Later arrangements were completed to turn off the lights during air raids.

Later a military order required the constant dim-out of traffic lights. This order was complied with by installing small metal cut-off plates on the hoods of all traffic lights. The plates were made from used paint cans on hand. The total cost installed was approximately one-sixteenth of the cost of other dim-out devices used in this area.

Three phases of military operations required our attention: First, the possibility of sabotage resulted in extensive work regarding parking and routing of traffic; second, camouflage requirements resulted in replotting of parking areas adjacent to strategic locations; third, military traffic resulted in large scale prohibition of parking on strategic routes.

The rubber shortage has resulted in greater dependency on mass carriers. Methods of coping with this trend were studied by this department. This survey revealed the following points:

1. Concentrated war workers rather than scattered general public offers the more efficient field for use of mass carriers.
2. Mass carrier units can be made available to all, through a city-wide plan of staggered work hours. A complete plan was evolved by the Los Angeles Traffic Department.
3. Use of mass carriers must be inviting in the cases of the industrial worker and the suburban dweller by subsidy.
4. The removal of all but quarter-mile street car stops, a plan long advocated by this department is now being effected. This will reduce delay to both mass carriers and automobiles. It will have the effect of releasing some mass carrier units from peak load use.

Due first to blackout requirements and later to reduced traffic volumes, our continuous survey of traffic signals has resulted in a reduction in signal hours of operating time of approximately thirty per cent since December 7, 1941.

The above is a summary of our 1942 activities which were beyond our normal peace-time activities.

Regarding our projected work for 1943, the drop in personnel, plus the war-time economies requested of municipal governments, will result in a sharply reduced volume of work. Much war work will be required. Hence, the time and funds remaining for normal civilian work will be sharply reduced. Only urgent civilian work will be done in 1943. However, this department has already formulated plans for post-war work. These plans involving approximately one-half million dollars pertain in the main to traffic signal work. From time to time our staff will prepare further post-war plans. Off-street parking facilities is a field being explored in this connection.

In answer to a specific question of yours, it is believed that traffic engineering departments should be concerned in 1943 principally with maintenance and essential war activities. However, it is recognized that part of the war effort is a detailed post-war plan to take up slack in employment. It is believed such plans should be formulated. The only restriction should be that additional personnel not be hired for this work.

Mr. R. T. Dorsey, City Traffic Engineer, Los Angeles, California.

Last December the Editor of TRAFFIC ENGINEERING sent a letter to the membership asking those who felt so inclined to prepare a statement regarding the 1942 and proposed 1943 activities of their departments. Several replies have been received and all will be published as space permits.